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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,108	03/10/2004	Franki Ngai Kit Poon	V0690.0016	2465
7590 04/26/2006			EXAMINER	
Dickstein Shapiro Morin & Oshinsky LLP			LE, TUNG X	
1177 Avenue of the Americas			ART UNIT	
New York, NY 10036-2714			PAPER NUMBER	
			2821	

DATE MAILED: 04/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/796,108

Applicant(s)

POON ET AL.

Examiner

Tung X. Le

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This is a response to the applicant's filing on March 10, 2004. In virtue of this filing, claims 1-18 are currently presented in the instant application.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Nilssen (U.S. 5,510,681).

Regarding claim 1, Nilssen discloses, in figures 9 and 12, a power conversion apparatus for a non-linear load (FL1-FL2) comprising a pair of input terminals (B+ and B-) for connection to a DC voltage source (BR); a first and a second capacitor (BPC2-BPC1) connected in series coupled to the pair of input terminals; a first and a second diode (HR3-HR4) coupled in parallel with the first and second capacitors respectively (figure 12) such that the diodes are reverse biased under the DC voltage source; an inductor (SCT2) coupled to a first node (Jc) connecting the capacitors and diodes; a transformer (LT) comprising at least one primary winding (PW) and two secondary windings (SW and CHW), the transformer having its primary winding coupled to the inductor and its secondary windings coupled in series at a second node (BOT2), the secondary windings being constructed in a way to produce voltages with opposite polarities with respect to the second node coupling these two windings (figure 12); a

third terminal (Jq) coupled to the primary winding of the transformer, for connection to a pulsating voltage source (figure 11B), such voltage source charging or discharging the first and second capacitors within one pulsating cycle (figure 11D); and a non-linear load coupled to the secondary windings for electrical power (figure 3C, column 4, lines 47-57).

Regarding claim 2, Nilssen discloses, in figures 9 and 12, a power conversion apparatus for a non-linear load (FL1-FL2) comprising a pair of input terminals (B+ and B-) for connection to a DC voltage source (BR); a first and a second capacitor (BPC1-BPC2) connected in series coupled to the pair of input terminals; a first and a second diode (HR3-HR4) coupled in parallel with the first and second capacitors respectively (figure 12) such that the diodes are reverse biased under the DC voltage source; a first node (Jc) connecting the capacitors and diodes; a transformer (LT) comprising at least one primary winding (PW) and two secondary windings (SW-CHW), the transformer having its primary winding coupled to the first node and its secondary windings coupled in series at a second node (BOT2), the secondary windings being constructed in a way to produce voltages with opposite polarities with respect to the second node coupling these two windings (figure 12); a third terminal coupled to the primary winding of the transformer, for connection to a pulsating voltage source (figure 11B), such voltage source charging or discharging the first and second capacitors within one pulsating cycle (figure 11D); and a non-linear load coupled to the secondary windings for electrical power (figure 3C, column 4, lines 47-57).

Regarding claim 3, Nilssen discloses, in figures 9 and 12, a power conversion apparatus for a non-linear load (FL1-FL2) comprising a pair of input terminals (B+ and B-) for connection to a DC voltage source (BR); a first and a second diode (HR3-HR4) connected in series and coupled to the DC voltage source (BR) such that each diode is reverse biased under the DC voltage source; a first capacitor (BPC1) connected in parallel to either of the diodes (figure 9); an inductor (SCT2) coupled to a first node (Jc) connecting the diodes; a transformer (LT) comprising at least one primary winding (PW) and two secondary windings (SW-CHW), the transformer having its primary winding coupled to the inductor and its secondary windings coupled in series at a second node (BOT2), the secondary windings being constructed in a way to produce voltages with opposite polarities with respect to the second node coupling these two windings; a third terminal (Jq) coupled to the primary winding of the transformer, for connection to a pulsating voltage source (figure 11B), such voltage source charging or discharging the first and second capacitors within one pulsating cycle (figure 11D); and a non-linear load coupled to the secondary windings for electrical power (figure 3C, column 4, lines 47-57).

Regarding claims 4-6, Nilssen discloses the node joining the transformer secondary windings to one of the input terminals (see figure 8).

Regarding claims 7-9, Nilssen discloses that a discharge lamp (121), as the non-linear load, further comprises a capacitor (118) at the lamp load terminals to facilitate lamp operations (figure 7).

Regarding claims 10-12, Nilssen discloses in figure 8 a discharge lamp (124), as the non-linear load, further comprising two series capacitors (122 and 131) at the lamp load terminals to facilitate lamp operations; a node coupling the two series capacitors (figure 8); and means to couple the node to one of the input terminals (column 7, lines 66-67 and column 8, lines 1-6).

Regarding claims 13-15, Nilssen discloses in figure 14 the means for controlling the frequency of the pulsating voltage source coupled to the third terminal for control of output power (column 15, lines 22-38).

Regarding claims 16-18, Nilssen discloses, in figure 12, a power conversion apparatus comprising a rectifier (BR) module for connection to an AC source (S) and having a pair of output terminals (B+ and B-) which deliver a direct current; a pair of series switches (Q1-Q2) coupled to the pair of rectifier module output terminals for acceptance of the direct current, switching of the switches produces a pulsating DC source at a first node (Jy); means for coupling the first node with pulsating DC to the third terminal (Jq); and means for coupling the output terminals of the rectifier module to the input terminals (figure 12).

#### ***Citation of Relevant Prior Art***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hui et al. (U.S. 6,545,431 B2) discloses a dimmable electronic ballast;

Albou et al. (U.S. 5,065,072) discloses a power supply circuit for an ARC lamp in particular for a motor vehicle headlight;

Stupp et al. (U.S. 4,585,974) discloses a variable frequency current control device for discharge lamps;

Ben-Yaakow (U.S. 2005/0110431 A1) discloses a low frequency inverter fed by a high frequency AC current source; and

Muramatsu et al. (U.S. 2005/0035723 A1) discloses a discharge lamp lighting circuit.

***Inquiry***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung X. Le whose telephone number is 571-272-6010. The examiner can normally be reached on 8:30 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner  
Tung Le  
AU 2821

  
**TUYET VO**  
**PRIMARY EXAMINER**